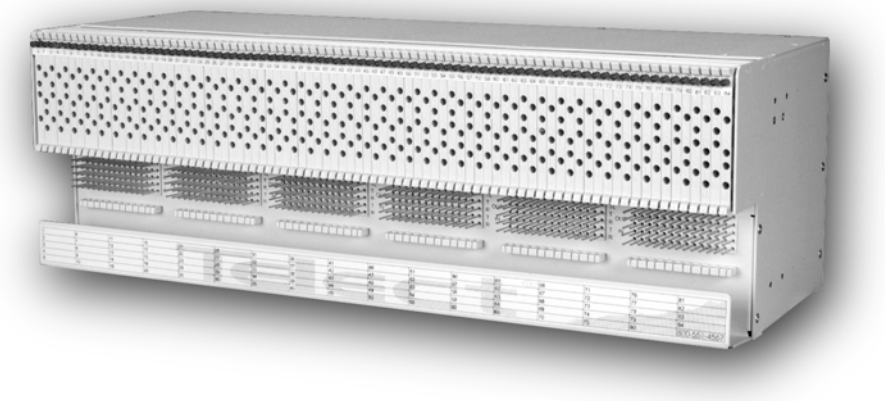
Dual Monitor DM-84

User Manual



Telect®
CONNECTING THE FUTURE®

Dual Monitor DM-84

User Manual 117883 A1.1

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About Telect

Telect offers complete solutions for physical layer connectivity, power, equipment housing and other network infrastructure equipment. From outside plant and central office to inside the home, Telect draws on more than 25 years of experience to deliver leading edge product and service solutions. Telect is committed to providing superior customer service and is capable of meeting the dynamic demands of customer and industry requirements. This commitment to customer and industry excellence has positioned Telect as a leading connectivity and power solution provider for the global communications industry.

Technical Support

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Chapter 1: Descriptions

1.1 Dual Monitor 84-Termination FXC

Telect's Dual Monitor 84-circuit Front Cross-connect panel (PN 010-DM84-7001) is designed to cross-connect, patch, monitor and allow test access to these circuits carrying these digital signals:

- DS1 (1.544 Mb/s at 100Ω impedance)
- DS1C (3.152 Mb/s at 100Ω impedance)

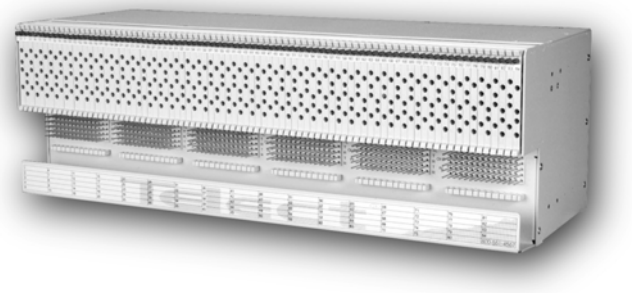

Figure 1 - Chassis - front view

1.1.1 Features

- Bi-directional monitoring from the front of the panel.
- The 7" (17.78 cm)-high panels attach to a 23" (58.4 cm) rack. Extended mount can be adjusted for 2", 3", and 4" (5, 7.6, and 10.2 cm) offset.
- The 7" panels work well with either EIA or WECO.

Figure 2 - Rear View

- The fully-loaded panel weighs 26.5 lbs. (12 kg.)
- Offset Bantam jack spacing accommodates standard Bantam cords in adjacent jacks permitting the use of industry standard patch cords.
- Insert-molded Plasti-Frame jacks meet all Bellcore standards for durability and reliability.
- Individual jacks detach from the chassis allowing the removal of a single jack without disrupting service at any other termination. Jack removal requires no I/O cabling or cross-connect changes.
- Each circuit has an LED for cross-connect verification.
- All pins are 0.45" square (.11 cm), suitable for 20-26AWG conductors.

1.2 Specifications

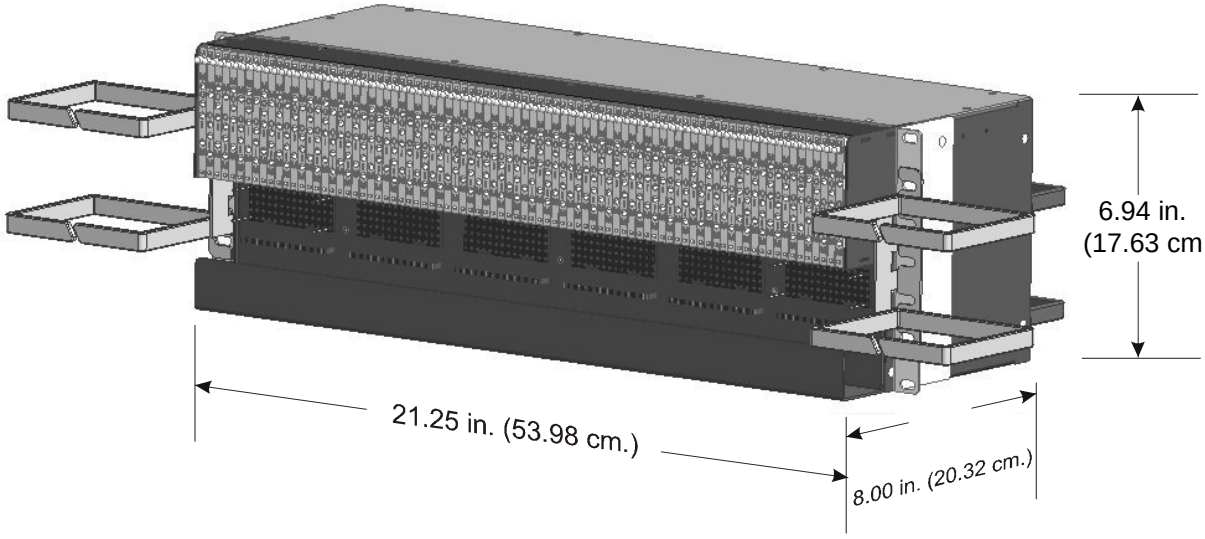

Figure 3 - Physical dimensions

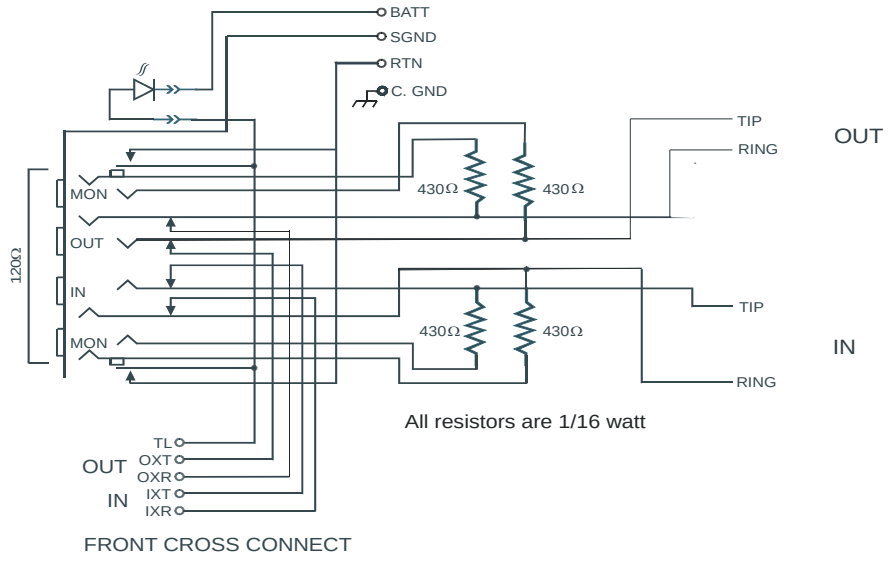

Figure 4 - Jack Schematic

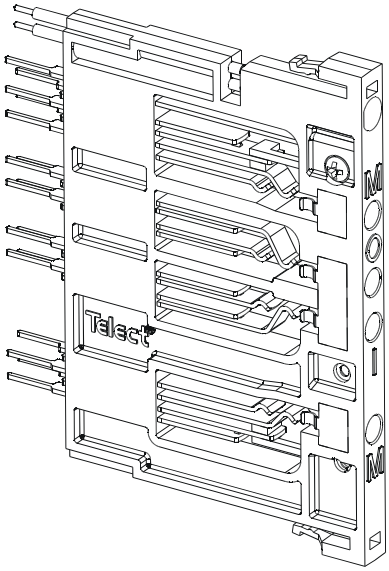

Figure 5 - Jack - PN 400220 (odd - shown), 400221 (even)

The jack has been designed to meet the following criteria:

1.2.1 Electrical

Insertion Loss: ≤–0.5 dB at 772 kHz and 1.024 MHz

Adjacent Channel (1 to 2) Crosstalk: ≤ -60 dB at 1.024 Mhz

Crosstalk— DS1, DS1C: ≤ –70 dB

Return Loss: ≥ 26 dB at 772 kHz and 1.024 MHz

Monitor level, jack in/jack out: -20 dB (-1 dB +/-0.5 dB)

Contact Resistance: ≤ 0.01Ω

1.2.2 Mechanical

Insertion Force: 4.17 lb (1.9 kg) average

Withdrawal Force: 5.21 lb (2.4 kg) average

Life: Minimum 20,000 insertion/withdrawal cycles

Vibration: Per MIL-STD-202F, Method 201A

1.2.3 Environmental

Humidity: To 95% (operating and non-operating)

Moisture Resistance: Per MIL-STD-202F, Method 106E

Salt Spray: Per MIL-STD-202F, Method 101D

Temperature: –40 to 149°F (–40 to 65°C) operating
–67 to 185°F (–55 to 85°C) non-operating

Thermal Shock: Per MIL-STD-202, Method 107D

1.3 System-Level Applications

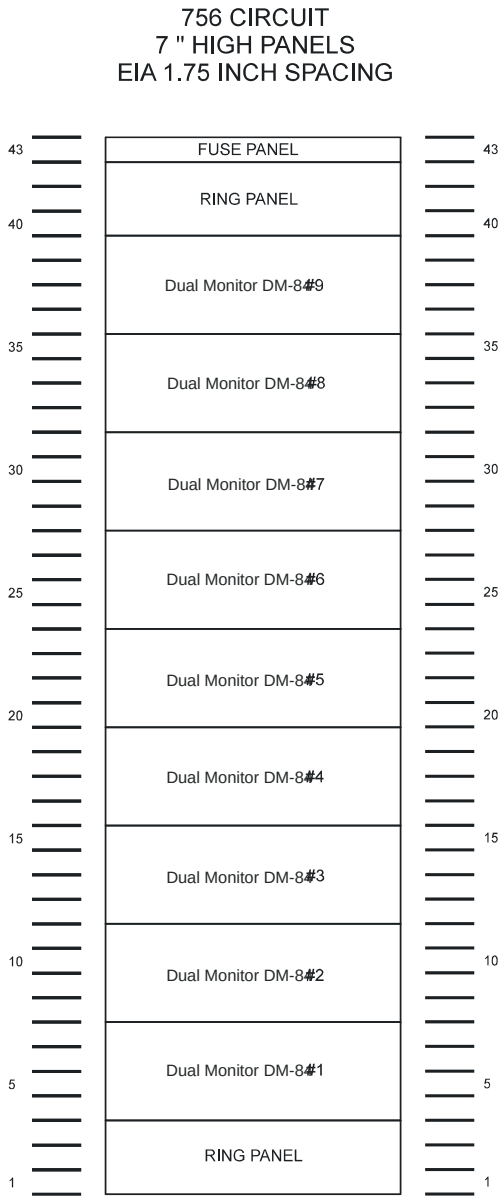

Figure 6 - 7’ racks, fully configured — typical EIA rack installation

Chapter 2: Installation

2.1 Installation Considerations

These procedures may be modified to agree with site practices or procedures.

2.1.1 Location and Space

Each Dual Monitor DM-84 chassis requires 7” (17.8 cm) of vertical space in a 23" (58.4 cm) rack.

2.1.2 Tools and Equipment

No special tools or equipment are needed.

2.2 Inspection

Compare the contents of the Dual Monitor DM-84 shipping container with the packing list. Call Telect if you are missing anything.

Telect is not liable for shipping damage.

If the shipping container is damaged, keep it for the carrier’s inspection. Notify the carrier and call Telect’s Customer Service Department: 1-800-551-4567 or 1-509-926-6000.

Keep the container until you have checked equipment operation. If you experience any kind of problem, call Telect’s Customer Service Department. Use the original, undamaged container if you are instructed to return the DM-84 to Telect.

2.3 Installation Procedure

Procedure steps:

1. Place the jumper wire rings over the studs on the mounting brackets and partially tighten the top screw and washer as shown (A), using the washers and screws provided.
2. Repeat step 1 on the other end of the panel.
3. Align cable management device and install the three remaining screws on each side.
4. Tighten all mounting screws to 35 in-lbs. (4.29 N•m).
5. Connect the shield ground according to your company's procedure.
6. Connect power at the rear of the panel to the wire wrap pins marked BATT and RTN. *Do not turn on.*
7. Connect the Input/Output cabling from the digital equipment to Input/Output pins on the panel backplane.
8. Connect the "DIGITAL XMIT" connector on the equipment to the OUT pins on the DM-84.
9. Connect the "DIGITAL REC" on the equipment to the IN pins on the DM-84.
10. See "User Functions" on page 7 for instructions on creating cross-connects.

This procedure is complete.

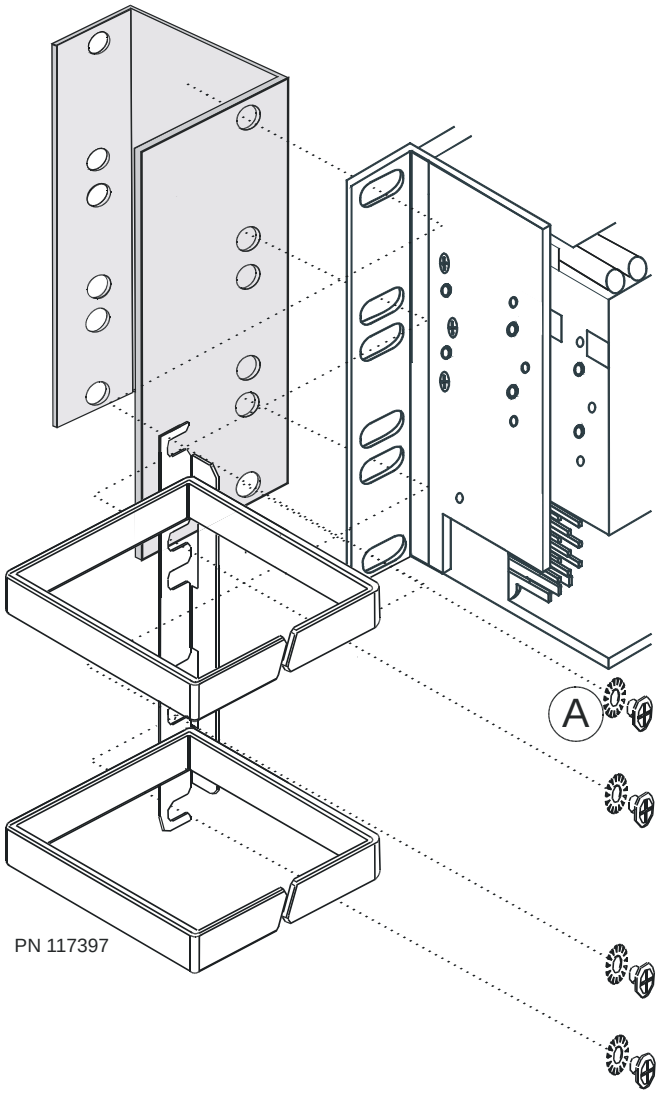

Figure 7 - Installing the Jumper Rings

Chapter 3: User Functions

3.1 Cross-connecting Circuits

Procedure steps:

1. Make cross-connects at the wire-wrap pins on the front of the DSX panel, using company-approved wire-wrap techniques:
   a. Use 5-conductor, 24AWG jumpers.
   b. Attach the green jumper wire from the tracer lamp (TL) pin of the NE-1 jack to the TL pin of the NE-2 jack.
   c. Connect the OUT pins of NE-1 to the IN pins of NE-2 using the Wht-blue jumper for tip-to-tip and blue-white jumper for ting-to-ring connections.
   d. Connect the IN pins of NE-1 to the OUT pins of NE-2 using the Wht-orange jumper for tip-to-tip and orange-white jumpers for ring-to-ring.

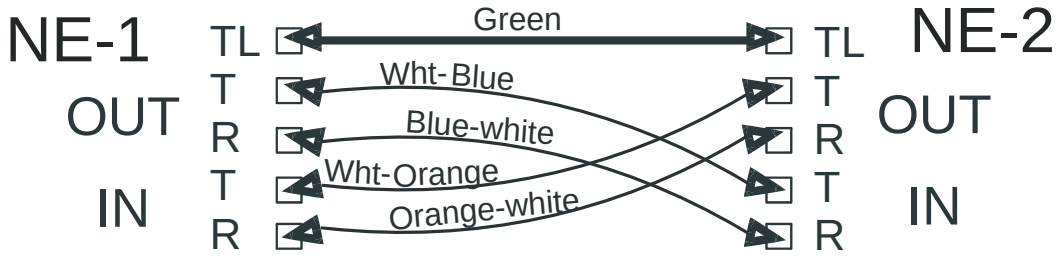

Figure 8 - Cross-connecting Circuits

   e. Record the cross-connect circuit identification on the circuit designation strip on the front of the Dual Monitor E-84 panel.
   f. Disconnect and discard any jumper wires not in use.
   g. Route the jumper wires that are connected to jacks on the left half of the panel into the left vertical wire rings.
   h. Route the jumper wires that are connected to jacks on the right half into the right vertical wire rings.
2. Apply power to the panel.

3. Test the cross-connect by inserting a plug into MON jack of the first jack in the circuit. The tracer lamps of both jacks in the circuit should flash for about 30 seconds, then light steadily.

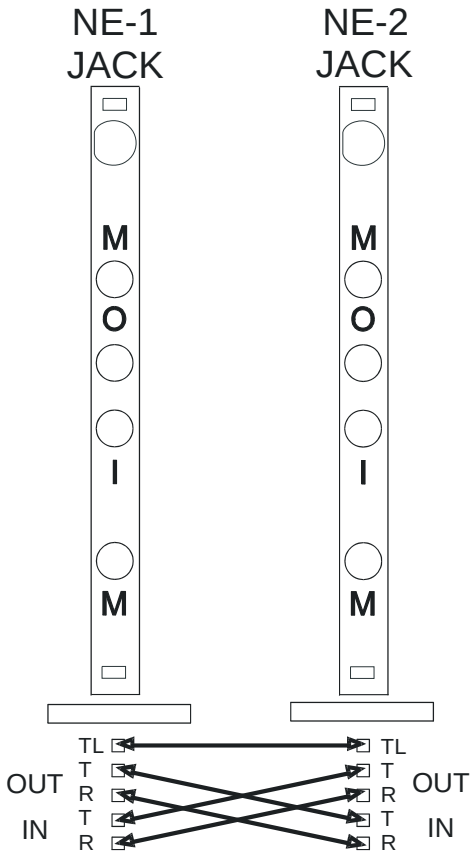

Figure 9 - Wire-wrap Cross Connect

This procedure is complete.

3.2 Patching

You can make temporary connections of circuits to repair, test, or monitor incoming and outgoing lines, using either dual patch cords or two single patch cords.

3.2.1 Two Single Patch Cords

Procedure steps:

1. Insert a single patch cord into the IN jack of the NE-1 jack.
2. Insert the other end into the OUT jack of the NE-2 jack.
3. Insert another single patch cord into OUT jack of the NE-1 jack.

4. Insert the other end of the patch cord into the IN jack of the NE-2 jack.

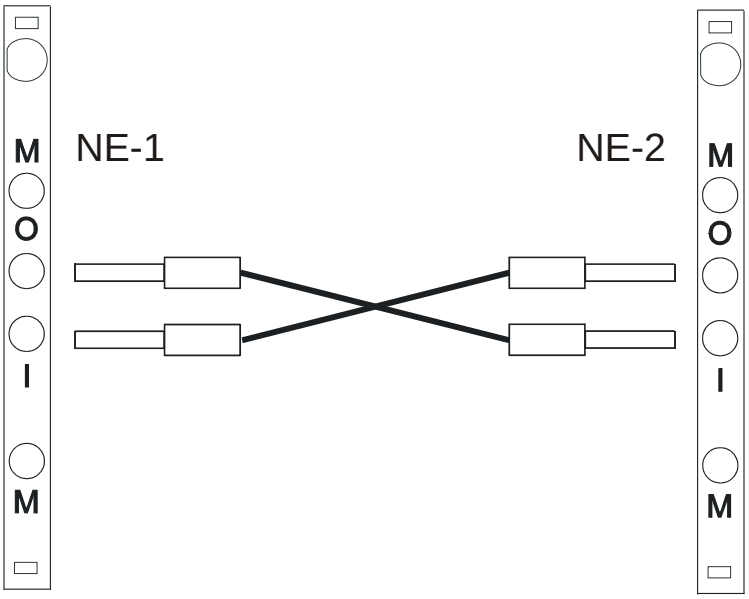

Figure 10 - Using Two Single Patch Cords

This procedure is complete.

3.2.2 Dual Patch Cord

Procedure steps:

1. Insert a dual patch cord into the IN and OUT ports of the NE-1 jack.
2. Twist the plug on the other end of the cord so that it is reversed (i.e., turned upside down from the first selected pair). Insert this end into the In and Out ports of the NE-2 jack.

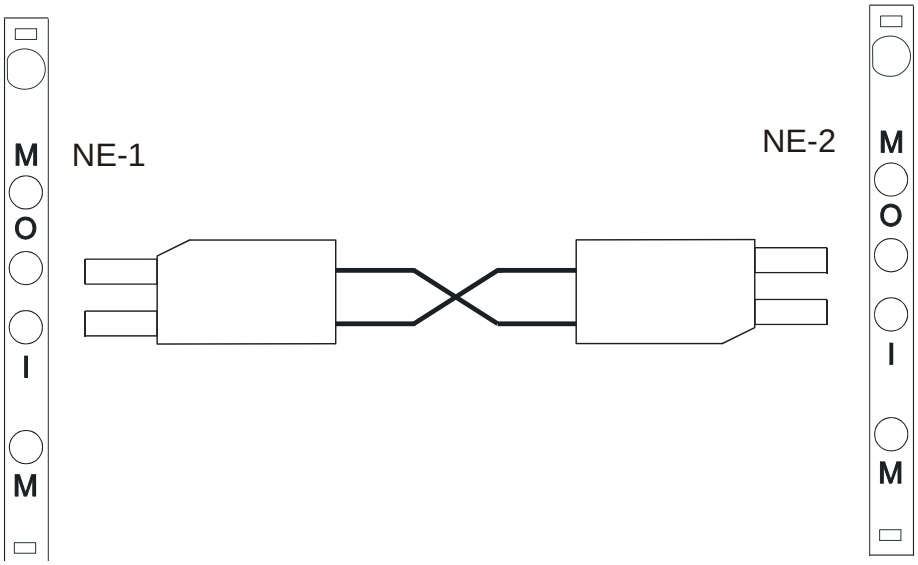

Figure 11 - Using a Dual Patch Cord

This procedure is complete.

3.3 Monitor Functions

Insert a Bantam monitor jack from test equipment into the top Monitor jack to monitor the Out signal for a circuit. Insert the test jack into the bottom Monitor jack to monitor the In signal. These monitor procedures are non-intrusive.

3.4 Patch and Roll

Patching and rolling, as illustrated in the figures below, allows a circuit to be moved from an existing facility (A) to a new or spare facility (C), including new permanent cross-connects.

Procedure steps:

1. Temporarily transfer the existing circuit from B to C by installing patch cords between the two jacks as shown. Installing the patch cords in this way disconnects the A facility from the B and at the same time establishes temporary continuity between B and C (new or spare facility).

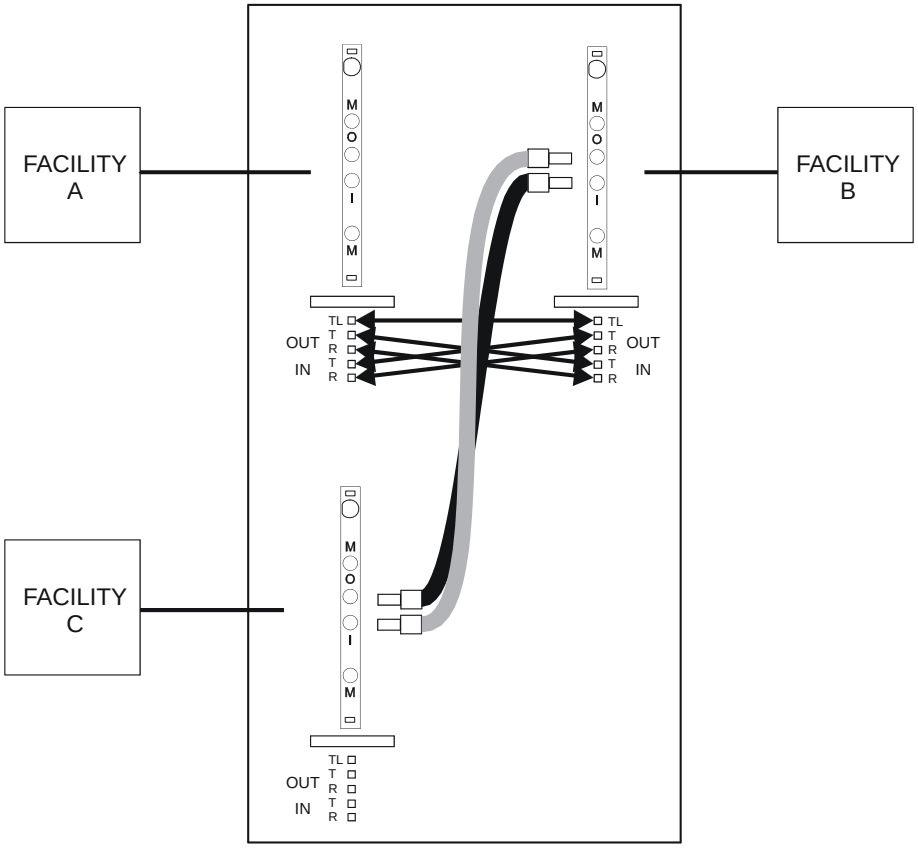

Figure 12 - Installing the patch cords

2. Remove the cross connects between the A and B facilities.
3. Place cross-connects between B and C.

4. Remove the patch cords between B and C. Service is now established through the new cross-connect jumpers.

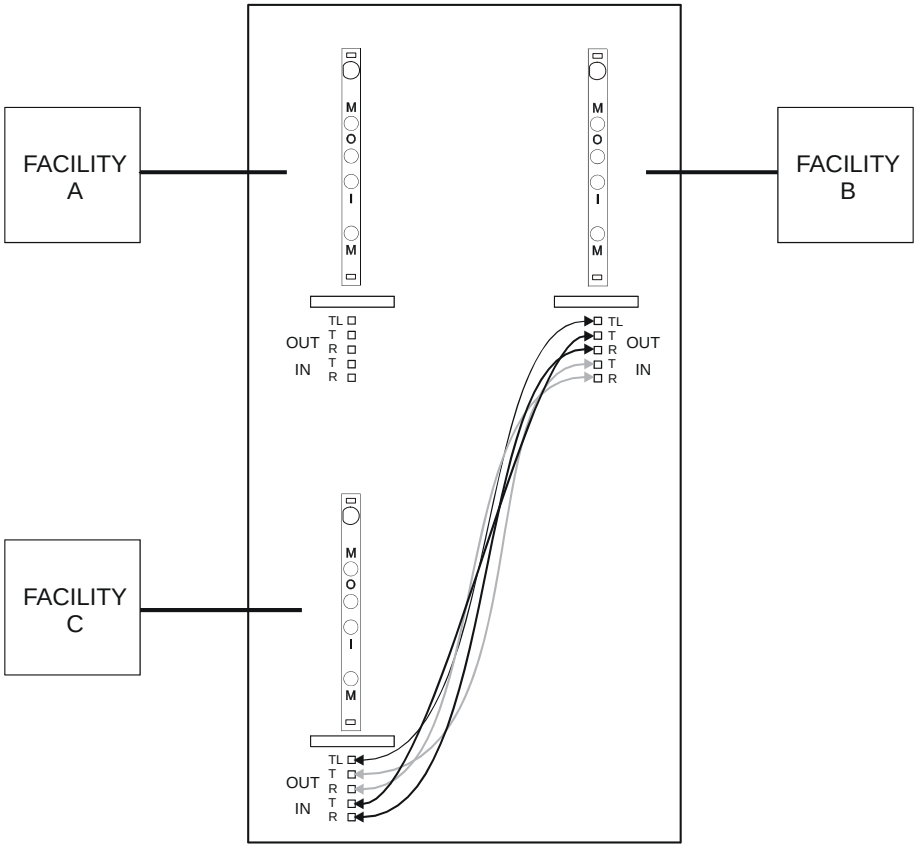

Figure 13 - Establishing Service

This procedure is complete.

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Chapter 4: Service

4.1 Changing Jack Modules

You can remove a jack module from the panel without disturbing the cross-connect wiring. **However, removing the jack module <u>does disconnect</u> the service provided by that circuit.**

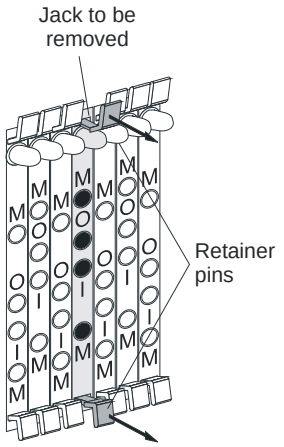

Figure 14 - Pulling the retainer pins

4.1.1 Removing a Jack Module

Procedure steps:

1. Pull the small retainer pins at the top and bottom of the jack module straight out, as shown. You can use a small screwdriver to disengage the retainer pins.

2. Insert a dual plug (to use as a handle) into the jack module. Move the plug up and down slowly while pulling the jack module out of the panel.

This procedure is complete.

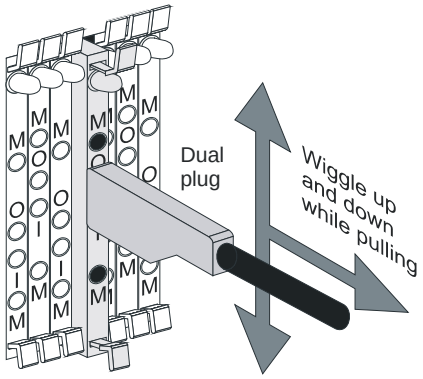

Figure 15 - Pulling the Jack Module

4.1.2 Inserting a Jack Module

Procedure steps:

1. Slide a new jack module into the vacant slot in the DM-84 panel, as shown below. Insert the module carefully and straight.

   If you cannot feel the leads entering the sockets, wiggle the module gently to align them. Do not force the module; push it carefully into the sockets. All module pins must align with sockets inside the DM-84.

2. Push in the retainer pins to secure the module.
3. Test the new jack module using standard office procedures.

This procedure is complete.

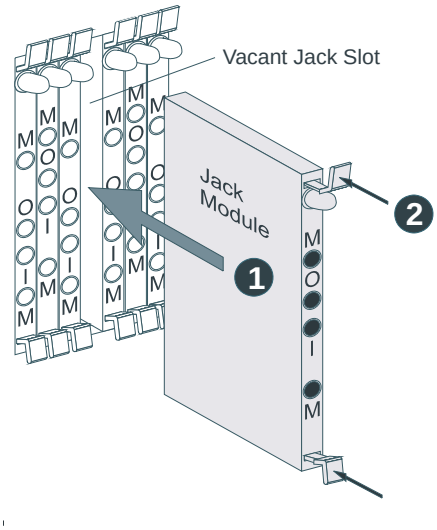

Figure 16 - Inserting a Jack Module

4.2 Changing LEDs

Should an LED burn out, you can quickly replace it.

Procedure steps:

1. Pull the defective LED straight out with your fingers.
2. Align the replacement LED with the LED socket in the jack module. Notice that the socket is keyed, and the LED only enters one way.

CAUTION

CAUTION! Take care not to bend the LED's two metal leads.

3. Gently insert the LED into the socket. If you encounter resistance, do not force the LED into position. Move the LED until it slides easily into the jack module.
4. When the LED snaps into place, the installation is complete.
5. To test the new LED, insert a plug into the "M" (monitor) jack. The LED will flash for about 30 seconds, then light steadily.

This procedure is complete.

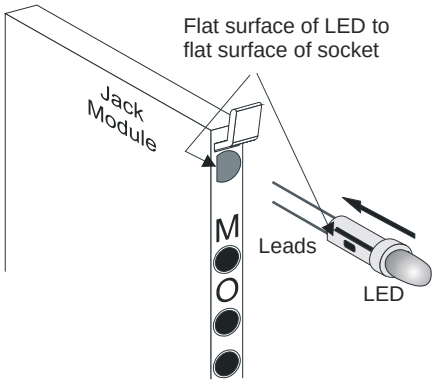

Figure 17 - Inserting the LED

(Use the subsections below that make the most sense for your equipment.)

If problems occur after initial installation, check all cable connections and the installation instructions in Chapter 2.

4.3 Cross-Connections

See User Functions, Chapter 3.

4.4 In-Warranty Service

Contact your Telect equipment distributor, or call a Telect Customer Service Representative:

1-800-551-4567
1-509-926-6000

Telect will repair or replace defective products within the limits of the warranty. See “Repacking for Shipment” in this section.

Call a Customer Service Representative for a Return Material Authorization (RMA) before returning any equipment.

4.5 Out-Of-Warranty Service

The procedure for out-of-warranty service is the same as for in-warranty service, except that Telect charges a processing fee, and you must submit a Purchase Order along with a Return Material Authorization (RMA) before returning equipment. Call a Customer Service Representative for help getting these forms.

The processing fee guarantees a repair estimate and is credited against actual material and labor costs.

4.6 Repacking For Shipment

1. Tag the equipment showing owner’s name, address, and telephone number, together with a detailed description of the problem.
2. Use the original shipping container if possible. If you do not have it, package the equipment in a way to prevent shipping damage. Include the RMA inside the container.
3. Insure the package.

NOTE: Telect is not liable for shipping damage.

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